

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/538, 544  
Source: PCT  
Date Processed by STIC: 06/21/2005

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PCT

## RAW SEQUENCE LISTING

DATE: 06/21/2005

PATENT APPLICATION: US/10/538,544

TIME: 13:45:59

Input Set : A:\SEQUENCE LISTING.txt

Output Set: N:\CRF4\06172005\J538544.raw

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3 <110> APPLICANT: BASF Aktiengesellschaft
7 <120> TITLE OF INVENTION: Malate dehydrogenase as target for herbicides
11 <130> FILE REFERENCE: PF 0000 054200
C--> 15 <140> CURRENT APPLICATION NUMBER: US/10/538,544
C--> 15 <141> CURRENT FILING DATE: 2005-06-10
15 <160> NUMBER OF SEQ ID NOS: 12
19 <170> SOFTWARE: PatentIn version 3.1
23 <210> SEQ ID NO: 1
25 <211> LENGTH: 673
27 <212> TYPE: DNA
29 <213> ORGANISM: Nicotiana tabacum
33 <400> SEQUENCE: 1
34 gcggccgcta aacctccttg ttcttttacg ccagaggaag ctgaatatTTT aacatctcgt      60
36 atacaaaatg ggggaactga agttgttgag gcaaaagctg gtgctgggtc ggcaactctc      120
38 tctatggcat atgctgcggt taaatttgcc gacgcatggt tgcattggatt gagaggagat      180
40 gctggcattg tagaatgtgc ctttgtgtct tctcaggtga ctgaacttcc atttttcgca      240
42 tcaaaagtat ggcttgccg caacggaggt gaagaaatat accccttggt tccctaaat      300
44 gaatacgaga ggtctgggct tgagaaggca aggaaagagt tggcaacaag tgttcagaag      360
46 ggtgtcaact ttgtaaagaa atgagcagac agctacatga cttccaaaag atgcttttat      420
48 gtgggctata tatctcaaat ccgcagttcc agaaaataag agtagtttct ttcttgatt      480
50 aaagggcaaa tcctgttcta attttctata gattgatgcc ttgggtgcaga aaataaatgt      540
52 actatttggt catctaaaat aacaacagtc cccagtgcatt gttggacttg caaagtatta      600
54 catcctttga agcaagggtc tgttatggac tttttgacag tatggatatt taaagggtc      660
56 ggagagcggc cgc                                          673
59 <210> SEQ ID NO: 2
61 <211> LENGTH: 1505
63 <212> TYPE: DNA
65 <213> ORGANISM: Nicotiana tabacum
69 <220> FEATURE:
71 <221> NAME/KEY: CDS
73 <222> LOCATION: (148)..(1221)
75 <223> OTHER INFORMATION:
W--> 79 <400> 2
80 ctaatacgac tcactatagg gcaagcagtg gtatcaacgc agagtacgcg ggggggaaac      60
82 aaaattcaat tacttacctt gatttctact acctctcttt ctcatcataa ttcaaacaca      120
84 caaattctca agcccaagtc ttagaat atg cag aac ggt gca gag acc tat cga      174
85                               Met Gln Asn Gly Ala Glu Thr Tyr Arg
86                               1                               5
88 cga atg gcc acc atc tca gct cac ctt aac ccc tct cct tct tct cat      222
89 Arg Met Ala Thr Ile Ser Ala His Leu Asn Pro Ser Pro Ser Ser His
90 10                               15                               20                               25
92 cag atg gag gga ggt gtg ggt ttg agc cga gct aat tgc agg gcg aaa      270
93 Gln Met Glu Gly Gly Val Gly Leu Ser Arg Ala Asn Cys Arg Ala Lys

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|     |   |      |     |     |
|-----|---|------|-----|-----|
| 94  | 30  | 35   | 40  |     |
| 96  | ggg ggt tct cca gga ttc aaa gtc gcg atc ttg ggt gct gca gga ggt | 318  |     |     |
| 97  | Gly Gly Ser Pro Gly Phe Lys Val Ala Ile Leu Gly Ala Ala Gly Gly |      |     |     |
| 98  | 45  | 50   | 55  |     |
| 100 | att ggt cag cca ctt gct atg ctt atg aaa acg aat cca ctg gtt tca | 366  |     |     |
| 101 | Ile Gly Gln Pro Leu Ala Met Leu Met Lys Thr Asn Pro Leu Val Ser |      |     |     |
| 102 | 60  | 65   | 70  |     |
| 104 | gtt ctg cat ctt tat gat gtt gcc aat act cct ggt gta act gct gac | 414  |     |     |
| 105 | Val Leu His Leu Tyr Asp Val Ala Asn Thr Pro Gly Val Thr Ala Asp |      |     |     |
| 106 | 75  | 80   | 85  |     |
| 108 | att agc cac atg gac act ggt gcc gtg gta cgt ggt ttt cta ggg cct | 462  |     |     |
| 109 | Ile Ser His Met Asp Thr Gly Ala Val Val Arg Gly Phe Leu Gly Pro |      |     |     |
| 110 | 90  | 95   | 100 | 105 |
| 112 | caa caa ttg gaa gat gct ctc act ggc atg gac ctt gta ata atc cct | 510  |     |     |
| 113 | Gln Gln Leu Glu Asp Ala Leu Thr Gly Met Asp Leu Val Ile Ile Pro |      |     |     |
| 114 | 110   | 115  | 120 |     |
| 116 | gct ggt gtt cct aga aaa cca ggc atg aca aga gat gat ctt ttc aac | 558  |     |     |
| 117 | Ala Gly Val Pro Arg Lys Pro Gly Met Thr Arg Asp Asp Leu Phe Asn |      |     |     |
| 118 | 125   | 130  | 135 |     |
| 120 | atc aat gca gga att gtg agg act tta tgt gaa gga att gcc aag tgc | 606  |     |     |
| 121 | Ile Asn Ala Gly Ile Val Arg Thr Leu Cys Glu Gly Ile Ala Lys Cys |      |     |     |
| 122 | 140   | 145  | 150 |     |
| 124 | tgt cct aag gcc att gtt aac ata att agt aat cct gtt aac tct aca | 654  |     |     |
| 125 | Cys Pro Lys Ala Ile Val Asn Ile Ile Ser Asn Pro Val Asn Ser Thr |      |     |     |
| 126 | 155   | 160  | 165 |     |
| 128 | gta cca att gct gca gag gtt ttc aag aag gct ggc acc ttt gat ccg | 702  |     |     |
| 129 | Val Pro Ile Ala Ala Glu Val Phe Lys Lys Ala Gly Thr Phe Asp Pro |      |     |     |
| 130 | 170   | 175  | 180 | 185 |
| 132 | agg aga ctg ttg ggc gtg aca atg ctt gat att gtc aga gcc aat aca | 750  |     |     |
| 133 | Arg Arg Leu Leu Gly Val Thr Met Leu Asp Ile Val Arg Ala Asn Thr |      |     |     |
| 134 | 190   | 195  | 200 |     |
| 136 | ttt gtg gct gaa gtt ttg ggg ctt gat cct agg gaa gtg gat gtt cca | 798  |     |     |
| 137 | Phe Val Ala Glu Val Leu Gly Leu Asp Pro Arg Glu Val Asp Val Pro |      |     |     |
| 138 | 205   | 210  | 215 |     |
| 140 | gtt gtg ggg ggt cat gct ggc gtt aca att cta cct ctt tcc cag     | 846  |     |     |
| 141 | Val Val Gly Gly His Ala Gly Val Thr Ile Leu Pro Leu Leu Ser Gln |      |     |     |
| 142 | 220   | 225  | 230 |     |
| 144 | gtt aaa cct cct tgt tct ttt acg cca gag gaa act gaa tat tta aca | 894  |     |     |
| 145 | Val Lys Pro Pro Cys Ser Phe Thr Pro Glu Glu Thr Glu Tyr Leu Thr |      |     |     |
| 146 | 235   | 240  | 245 |     |
| 148 | tct cgt ata caa aat ggg gga act gaa gtt gtt gag gca aaa gct ggt | 942  |     |     |
| 149 | Ser Arg Ile Gln Asn Gly Gly Thr Glu Val Val Glu Ala Lys Ala Gly |      |     |     |
| 150 | 250   | 255  | 260 | 265 |
| 152 | gct ggt tcg gca act ctc tct atg gca tat gct gcg gtt aaa ttt gcc | 990  |     |     |
| 153 | Ala Gly Ser Ala Thr Leu Ser Met Ala Tyr Ala Ala Val Lys Phe Ala |      |     |     |
| 154 | 270   | 275  | 280 |     |
| 156 | gac gca tgt ttg cat gga ttg aga gga gat gct ggc att gta gaa tgt | 1038 |     |     |
| 157 | Asp Ala Cys Leu His Gly Leu Arg Gly Asp Ala Gly Ile Val Glu Cys |      |     |     |
| 158 | 285   | 290  | 295 |     |

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160 gcc ttt gtg tct tct cag gtg act gaa ctt cca ttt ttc gca tca aaa      1086
161 Ala Phe Val Ser Ser Gln Val Thr Glu Leu Pro Phe Phe Ala Ser Lys
162          300                      305                      310
164 gta cgg ctt ggc cgc aac gga gtt gaa gaa ata tac ccc ctt ggt ccc      1134
165 Val Arg Leu Gly Arg Asn Gly Val Glu Glu Ile Tyr Pro Leu Gly Pro
166          315                      320                      325
168 cta aat gaa tac gag agg tct ggg ctt gag aag gca aag aaa gag ctg      1182
169 Leu Asn Glu Tyr Glu Arg Ser Gly Leu Glu Lys Ala Lys Lys Glu Leu
170 330          335                      340                      345
172 gca aca agt gtt cag aag ggt gtc aac ttt gta aag aaa tgagcagaca      1231
173 Ala Thr Ser Val Gln Lys Gly Val Asn Phe Val Lys Lys
174          350                      355
176 gctacatgac ttccaaaaga tgcttttatg tgggctatat atctcaaadc cgcagttcca      1291
178 gaaaataaga gtagtttctt tcttgattata aaggggcaaat cctgttctaa ttttctatag      1351
180 attgatgcct tggtgcagaa aataaatgta ctatttggtc atctaaaata acaacagtcc      1411
182 ccagtgcatt ttggacttgc aaagtattac atcctttgaa gcaagggcct gttatggact      1471
184 ttttgacagt atggatattt aaagggcctg gaga                                1505
187 <210> SEQ ID NO: 3
189 <211> LENGTH: 358
191 <212> TYPE: PRT
193 <213> ORGANISM: Nicotiana tabacum
197 <400> SEQUENCE: 3
199 Met Gln Asn Gly Ala Glu Thr Tyr Arg Arg Met Ala Thr Ile Ser Ala
200 1          5          10          15
203 His Leu Asn Pro Ser Pro Ser Ser His Gln Met Glu Gly Gly Val Gly
204          20          25          30
207 Leu Ser Arg Ala Asn Cys Arg Ala Lys Gly Gly Ser Pro Gly Phe Lys
208          35          40          45
211 Val Ala Ile Leu Gly Ala Ala Gly Gly Ile Gly Gln Pro Leu Ala Met
212          50          55          60
215 Leu Met Lys Thr Asn Pro Leu Val Ser Val Leu His Leu Tyr Asp Val
216 65          70          75          80
219 Ala Asn Thr Pro Gly Val Thr Ala Asp Ile Ser His Met Asp Thr Gly
220          85          90          95
223 Ala Val Val Arg Gly Phe Leu Gly Pro Gln Gln Leu Glu Asp Ala Leu
224          100         105         110
227 Thr Gly Met Asp Leu Val Ile Ile Pro Ala Gly Val Pro Arg Lys Pro
228          115         120         125
231 Gly Met Thr Arg Asp Asp Leu Phe Asn Ile Asn Ala Gly Ile Val Arg
232          130         135         140
235 Thr Leu Cys Glu Gly Ile Ala Lys Cys Cys Pro Lys Ala Ile Val Asn
236 145          150         155         160
239 Ile Ile Ser Asn Pro Val Asn Ser Thr Val Pro Ile Ala Ala Glu Val
240          165         170         175
243 Phe Lys Lys Ala Gly Thr Phe Asp Pro Arg Arg Leu Leu Gly Val Thr
244          180         185         190
247 Met Leu Asp Ile Val Arg Ala Asn Thr Phe Val Ala Glu Val Leu Gly
248          195         200         205
251 Leu Asp Pro Arg Glu Val Asp Val Pro Val Val Gly Gly His Ala Gly

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252      210      215      220
255 Val Thr Ile Leu Pro Leu Leu Ser Gln Val Lys Pro Pro Cys Ser Phe
256 225      230      235      240
259 Thr Pro Glu Glu Thr Glu Tyr Leu Thr Ser Arg Ile Gln Asn Gly Gly
260      245      250      255
263 Thr Glu Val Val Glu Ala Lys Ala Gly Ala Gly Ser Ala Thr Leu Ser
264      260      265      270
267 Met Ala Tyr Ala Ala Val Lys Phe Ala Asp Ala Cys Leu His Gly Leu
268      275      280      285
271 Arg Gly Asp Ala Gly Ile Val Glu Cys Ala Phe Val Ser Ser Gln Val
272      290      295      300
275 Thr Glu Leu Pro Phe Phe Ala Ser Lys Val Arg Leu Gly Arg Asn Gly
276 305      310      315      320
279 Val Glu Glu Ile Tyr Pro Leu Gly Pro Leu Asn Glu Tyr Glu Arg Ser
280      325      330      335
283 Gly Leu Glu Lys Ala Lys Lys Glu Leu Ala Thr Ser Val Gln Lys Gly
284      340      345      350
287 Val Asn Phe Val Lys Lys
288      355

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291 &lt;210&gt; SEQ ID NO: 4

293 &lt;211&gt; LENGTH: 16

295 &lt;212&gt; TYPE: DNA

297 &lt;213&gt; ORGANISM: Artificial Sequence

301 &lt;220&gt; FEATURE:

303 &lt;223&gt; OTHER INFORMATION: Primer

305 &lt;400&gt; SEQUENCE: 4

306 agaattcgcg gccgct

16

309 &lt;210&gt; SEQ ID NO: 5

311 &lt;211&gt; LENGTH: 32

313 &lt;212&gt; TYPE: DNA

315 &lt;213&gt; ORGANISM: Artificial Sequence

319 &lt;220&gt; FEATURE:

321 &lt;223&gt; OTHER INFORMATION: Primer

323 &lt;400&gt; SEQUENCE: 5

324 ctcattgcggc cgcgcgcaac gcaattaatg tg

32

327 &lt;210&gt; SEQ ID NO: 6

329 &lt;211&gt; LENGTH: 32

331 &lt;212&gt; TYPE: DNA

333 &lt;213&gt; ORGANISM: Artificial Sequence

337 &lt;220&gt; FEATURE:

339 &lt;223&gt; OTHER INFORMATION: Primer

341 &lt;400&gt; SEQUENCE: 6

342 tcatgcggcc gcgagatcca gttcgatgta ac

32

345 &lt;210&gt; SEQ ID NO: 7

347 &lt;211&gt; LENGTH: 21

349 &lt;212&gt; TYPE: DNA

351 &lt;213&gt; ORGANISM: Artificial Sequence

355 &lt;220&gt; FEATURE:

357 &lt;223&gt; OTHER INFORMATION: Primer

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TIME: 13:45:59

Input Set : A:\SEQUENCE LISTING.txt

Output Set: N:\CRF4\06172005\J538544.raw

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359 <400> SEQUENCE: 7
360 gtggattgat gtgatatctc c 21
363 <210> SEQ ID NO: 8
365 <211> LENGTH: 21
367 <212> TYPE: DNA
369 <213> ORGANISM: Artificial Sequence
373 <220> FEATURE:
375 <223> OTHER INFORMATION: Primer
377 <400> SEQUENCE: 8
378 gtaaggatct gagctacaca t 21
381 <210> SEQ ID NO: 9
383 <211> LENGTH: 17
385 <212> TYPE: DNA
387 <213> ORGANISM: Artificial Sequence
391 <220> FEATURE:
393 <223> OTHER INFORMATION: Primer
395 <400> SEQUENCE: 9
396 atgagggcga aaggggg 17
399 <210> SEQ ID NO: 10
401 <211> LENGTH: 25
403 <212> TYPE: DNA
405 <213> ORGANISM: Artificial Sequence
409 <220> FEATURE:
411 <223> OTHER INFORMATION: Primer
413 <400> SEQUENCE: 10
414 tttctttaca aagttgacac cttc 25
417 <210> SEQ ID NO: 11
419 <211> LENGTH: 17
421 <212> TYPE: DNA
423 <213> ORGANISM: Artificial Sequence
427 <220> FEATURE:
429 <223> OTHER INFORMATION: Primer
431 <400> SEQUENCE: 11
432 atgcgggcaa aaggtgg 17
435 <210> SEQ ID NO: 12
437 <211> LENGTH: 21
439 <212> TYPE: DNA
441 <213> ORGANISM: Artificial Sequence
445 <220> FEATURE:
447 <223> OTHER INFORMATION: Primer
449 <400> SEQUENCE: 12
450 tttcttcgca aagtaacac c 21

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**VERIFICATION SUMMARY**

PATENT APPLICATION: **US/10/538,544**

DATE: 06/21/2005

TIME: 13:46:00

Input Set : **A:\SEQUENCE LISTING.txt**

Output Set: **N:\CRF4\06172005\J538544.raw**

L:15 M:270 C: Current Application Number differs, Replaced Current Application No

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:79 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:75